Western Digital.

WD Red® Plus

Tackle Intensity with WD Red Plus

Packed with power to handle NAS environments in home offices up to medium-sized businesses, WD Red Plus is ideal for helping protect, archive and share valuable data in NAS systems with up to 8 bays. WD Red Plus NAS drives give you the flexibility, versatility and confidence you need for your important home and work files.

For Small or Medium Businesses

WD Red Plus drives deliver the speed and capacity business customers require to store, protect and share increasing amounts of data with a growing number of NAS users. For NAS systems with up to 8 bays, WD Red Plus drives deliver uncompromising performance and unwavering assurance backed by a 3-year limited warranty[3].

For Home Office and Power Users

Whether you're a power user looking to store high-resolution videos or running a home office with thousands of electronic documents, WD Red Plus drives are designed to help you effortlessly organize, protect and share your digital content.

Exclusive NASware™ Technology

Built into every WD Red hard drive is Western Digital's exclusive advanced firmware, NASware™. NASware is advanced technology that improves your NAS system by increasing performance, compatibility, upgradeability and reliability. NASware enables seamless integration, robust data protection and optimal performance for NAS systems operating under heavy demand.

Built for Optimum NAS Compatibility

Simply put, WD Red hard drives are some of the most compatible drives available for NAS enclosures. This wide-ranging compatibility is a reflection of our expansive NAS partner technology engagement and extensive compatibility testing.

3D Active Balance Plus

Our enhanced dual-plane balance control technology significantly improves the overall drive performance and reliability. Hard drives that are not properly balanced may cause excessive vibration and noise in a multi-drive system, reduce the hard drive life span and degrade the performance over time.

Built for Continuous Operation

Since your NAS system is always on, a reliable drive is essential. With an MTBF of up to 1 million hours[3], WD Red hard drives are engineered to handle rigorous workloads in 24×7 NAS environments.

World-Class Support and a 3-year Limited Warranty[3]

As an industry-leading hard drive manufacturer, Western Digital stands behind their NAS storage solutions with the assurance of a 3-year limited warranty, coupled with world-class support services.

Product Highlights

- Available in capacities ranging from 1–14TB[1] with support for NAS system with up to 8 bays
- Supports up to 180TB/year workload rate[2]
- NASware™ firmware for compatibility
- Built for small or medium business NAS systems in a 24/7 environment
- 3-year limited warranty[3]

WD Red versus Desktop Drives

It is important to choose a drive purpose-built for NAS with the features you need to help preserve your data and maintain optimum performance. Take the following into consideration when choosing a hard drive for your NAS:

- **Compatibility**: Unlike desktop drives, WD Red drives are specifically tested for compatibility with NAS systems for optimum performance.
- **Reliability**: Desktop drives aren't typically designed for the demands of an always-on NAS environment. WD Red NAS hard drives are tested under tough conditions like you might experience in your environment and designed to perform under those extreme conditions.
- **Error Recovery Controls**: WD Red drives are specifically designed with RAID error recovery control to help reduce failures within the NAS system.
- **Noise and Vibration Protection**: Designed to operate solo, desktop drives typically offer little or no protection from the noise and vibration present in a multi-drive system. WD Red drives are designed to thrive in multi-bay NAS system environments.

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Specifications

	14TB[1]	12TB[1]	10TB[1]	8TB[1]	8TB[1]	6TB[1]	6TB[1]
Model Number[4]	WD140EFGX	WD120EFAX	WD101EFAX	WD80EFAX	WD80EFZX	WD60EFPX	WD60EFZX
	WD140EFFX[7]	WD120EFBX	WD101EFBX	WD80EFBX	WD80EFZZ		
Recording technology	CMR	CMR	CMR	CMR	CMR	CMR	CMR
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity[1]	14TB	12TB	10TB	8TB	8TB	6TB	6TB
Form factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Native command queuing	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advanced Format (AF)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RoHS compliant[5]	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Performance

	14TB	12TB	10TB	8TB	8TB	6TB	6TB
Internal transfer rate[6] up to	210 MB/s	196 MB/s	215 MB/s	210 MB/s	185 MB/s	180 MB/s	185 MB/s
Cache (MB)[1]	512 MB	256 MB	256 MB	256 MB	128 MB	256 MB	128 MB
RPM	7200	7200[7]	7200	7200	5640	5640	5640

Reliability/Data Integrity

	14TB	12TB	10TB	8TB	8TB	6TB	6TB
Load/unload cycles[8]	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Non-recoverable errors per bits read	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}
MTBF (hours)[9]	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Workload rate (TB/year)[2]	180	180	180	180	180	180	180
Limited warranty (years)[3]	3	3	3	3	3	3	3

Power Management[10]

	14TB	12TB	10TB	8TB	8TB	6TB	6TB
12VDC ±5% (A, peak)	1.85	1.854	1.85	1.85	1.75	1.75	1.75
Average power requirements (W)							
Read/write	6.5	6.3	8.4	8.8	6.2	4.7	6.2
Idle	3.0	2.9	4.6	5.3	4.1	3.1	4.1
Standby and sleep	0.8	0.6	0.5	0.8	0.4	0.3	0.4

Environmental Specifications

	14TB	12TB	10TB	8TB	8TB	6TB	6TB
Temperature (ºC)							
Operating	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65
Non-operating	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Shock (Gs)							
Operating, (2 ms, write)	30	30	30	30	70	70	70
Operating, (2 ms, read)	65	65	65	65	70	70	70
Non-operating (2 ms)	300	300	250	300	250	250	250
Acoustics (dBA)							
Idle	20	20	34	27	25	32	25
Seek (average)	29	29	38	29	30	27	30

Physical Dimensions

	14TB	12TB	10TB	8TB	8TB	6TB	6TB
Height (in./mm, max)	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1
Length (in./mm, max)	5.787/147	5.787/147	5.787/147	5.787/147	5.787/147	5.787/147	5.787/147
Width (in./mm, ± .01 in.)	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6
Weight (lb/kg , ± 3%)	1.52/0.69	1.46/0.66	1.65/0.75	1.58/0.715	1.65/0.75	1.65/0.75	1.65/0.75

Specifications subject to change without notice.

[1] 1MB = 1 million bytes, 1GB = 1 billion bytes and 1TB = 1 trillion bytes. Actual user capacity may be less depending on operating environment.

[2] Workload rate is defined as the amount of user data transferred to or from the hard drive. Workload rate is annualized (TB transferred X (8760 / recorded power-on hours)). Workload rate will vary depending on your hardware and software components and configurations.

[3] See support.wdc.com/warranty for regionally specific warranty details.

[4] Not all products may be available in all regions of the world.

[5] This hard drive product meets or exceeds Restriction of Hazardous Substances (RoHS) compliance requirements as mandated by the RoHS Directive 2011/65/EU and Directive (EU) 2015/863.

[6] Up to stated speed. As used for transfer rate, 1 MB/s = 1 million bytes per second. Based on internal testing; performance may vary depending upon host device, usage conditions, drive capacity and other factors.

[7] Actual spindle motor rotational speed for this model is 7200 RPM; although ID Device may report 5400 to reflect previous Performance Class designation.

[8] Controlled unload at ambient condition.

[9] MTBF specifications are based on a sample population and are estimated by statistical measurements and acceleration algorithms under typical operating conditions: workload of 90TB/year and drive temperature of 40ºC. Derating of MTBF will occur above these parameters, up to 65ºC drive temperature. MTBF does not predict an individual drive's reliability and does not constitute a warranty. Not all products may be available in all regions of the world.

[10] Power measurements at room/ambient temperature.

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Specifications

	4TB[1]	4TB[1]	3TB[1]	3TB[1]	2TB[1]	2TB[1]	1TB[1]	1TB[1]
Model Number[4]	WD40EFPX	WD40EFZX	WD30EFPX	WD30EFZX	WD20EFPX	WD20EFZX	WD10JFCX	WD10EFRX
Recording technology	CMR	CMR	CMR	CMR	CMR	CMR	CMR	CMR
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity[1]	4TB	4TB	3TB	3TB	2TB	2TB	2TB	1TB
Form factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Native command queuing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advanced Format (AF)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RoHS compliant[5]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Performance								
Internal transfer rate[6] up to	180 MB/s	175 MB/s	180 MB/s	175 MB/s	180 MB/s	175 MB/s	144 MB/s	150 MB/s
Cache (MB)[1]	256 MB	128 MB	256 MB	128 MB	64 MB	128 MB	16 MB	64 MB
RPM	5400	5400	5400	5400	5400	5400	5400	5400
Reliability/Data Integrity								
Load/unload cycles[8]	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Non-recoverable read errors per bits read	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}
MTBF (hours)[9]	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Workload rate (TB/year)[2]	180	180	180	180	180	180	180	180
Limited warranty (years)[3]	3	3	3	3	3	3	3	3
Power Management[10]								
12VDC ±5% (A, peak)	1.75	1.75	1.75	1.75	1.2	1.75	1.0	1.2
Average power requirements (W)								
Read/write	4.7	4.8	4.7	4.8	4.8	4.8	1.4	3.3
Idle	3.1	3.1	3.1	3.1	3.1	3.1	0.6	2.3
Standby and sleep	0.3	0.4	0.3	0.4	0.4	0.4	0.2	0.4
Environmental Specifications								
Temperature (°C)								
Operating	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65
Non-operating	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Shock (Gs)								
Operating, (2 ms, read/write)	70	70	70	70	70	70	400	30
Operating, (2 ms, read)	70	70	70	70	70	70		65
Non-operating (2 ms)	250	250	250	300	300	300	1000	250
Acoustics (dBA)								
Idle	23	23	23	23	21	23	24	21
Seek (average)	27	27	27	27	26	27	25	22
Physical Dimensions								
Height (in./mm, max)	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1	0.374/9.5	1.028/26.1
Length (in./mm, max)	5.787/147	5.787/147	5.787/147	5.787/147	5.787/147	5.787/147	3.94/100.2	5.787/147
Width (in./mm, ± .01 in.)	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6	4/101.6	2.75/69.85	4/101.6
Weight (lb/kg , ± 10%)	1.26/0.57	1.26/0.57	1.26/0.57	1.26/0.57	0.99/0.45	1.26/0.57	0.25/0.115	0.99/0.45

Specifications subject to change without notice. For footnote references, please see the previous page.

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